CENTER FOR PUBLIC ENVIRONMENTAL OVERSIGHT
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Dear Sirs/Mmes:

I appreciate the opportunity to comment on EPA's "Draft Guidance For Evaluating The Vapor Intrusion to Indoor Air Pathway From Groundwater And Soils" (Docket ID No. RCRA-2002-0033). I am pleased that EPA recognizes this pathway as an important potential human health risk, and I believe the Draft Guidance's tiered approach is reasonable. However, there is significant room for improvement.

1. The vapor intrusion pathway does not exist in isolation. The Guidance should require, at least at the third tier, the development of a conceptual site model that considers all contaminants, including breakdown products, all pathways, and all receptors. If EPA believes that other guidance documents adequate address other pathways, then this guidance should explain how to integrate vapor intrusion with other exposure routes.

2. I am particularly concerned that the guidance fragments risk by excluding as "background" outdoor air contamination and indoor sources. While I don't believe that responsible parties should be responsible for addressing indoor air contamination caused by residents' or businesses current or recent use of chemicals, I believe that risk should still be assessed.

3. Moreover, I do not believe that outdoor air contamination should be excluded from risk evaluation or the remedial response. Unlike metals in soil, such as arsenic and manganese, volatile organic compounds are not naturally occurring substances. Contamination from outdoor air may be caused by the same sources as the vapor intrusion pathway, and the risk from such contamination is additive.

There are at least six potential sources for outdoor air contamination, all of which may increase both indoor and outdoor air exposures. They should therefore considered in the creation of the conceptual site model.

A. Contamination that follows the indoor air pathway may migrate outside – and possibly increase contamination in other structures.
B. Systems which protect indoor air through venting may increase concentrations in outdoor air.
C. Volatile compounds may rise directly through the soil into the air.
D. Groundwater treatment systems may release contamination into the air.
E. Continuing use of volatile organic compounds, while diminishing, may directly release contaminants into the air.
F. Similar sources around the region may lead to widespread, but low levels of ambient contamination.

To protect public health, all such sources must be evaluated in conjunction with the indoor air pathway.

This is not just a hypothetical concern. At the military housing area at Moffett Field, California the responsible party, the U.S. Navy, is arguing that the residents are NOT at risk because it believes that outdoor air or undefined indoor sources are the cause of unsafe indoor air toxic levels, identified as a result of sampling by the Navy. Nearby, the responsible parties at the MEW Superfund Study Area are proposing, in their air monitoring workplan, to consider their work complete if outdoor contaminant concentrations exceed indoor levels.

4. The draft guidance barely mentions the potential for degradation. Yet in many environments, volatile organic compounds react as they rise to the surface. In fact, certain degradation products, such as vinyl chloride, are more likely to pollute the air. Furthermore, the atmospheric breakdown products may be quite different, yet just as toxic. The guidance should identify potential breakdown products to analyzed in all media, and it should underscore the importance of including potential chemical change in the conceptual site model

Again, this is not a hypothetical problem. At Ohio's former Marion Engineering Depot, sampling for vinyl chloride has been insufficient, despite indications that it is being released from an underground TCE source.

5. There may be a need to better explain the requirements for soil gas sampling below or near suspected indoor air pathways. At the Moffett housing site, the Navy is using soil gas tests to rule out the pathway, but it's my understanding that EPA intends to challenge that assertion, arguing that the Navy's sampling protocol is inadequate.

6. On page 9 on the draft guidance, EPA states, "For the purposes of making Current Human Exposures Under Control EI determinations with respect to vapor intrusion under RCRA and CERCLA, EPA generally recommends the use of 10^{-5} values." However, there is no justification. I believe the more stringent 10^{-6} level of projected increased cancer risk should be used unless otherwise justified on a site-specific basis."

7. Finally, it's important to stress that the forced migration or dilution of indoor air contamination is not a sufficient permanent solution. Remedies should be developed that reduce the likelihood that contamination will rise through the soil, and if remedies are already in place they should be reconsidered. Otherwise, contamination simply moves to the nearby outdoor air, other buildings, and the regional air basin.

That is, indoor air contamination should be treated as a sign that a site's cleanup should be reviewed and probably improved. It should not be evaluated or "treated" in isolation.

Sincerely,

Lenny Siegel
Executive Director